

* NOTICES *

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2.**** shows the word which can not be translated.

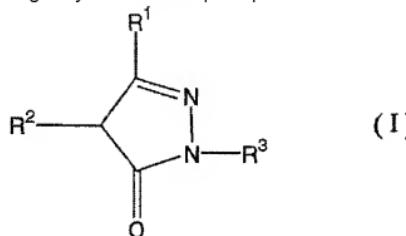
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1]

Oxidation stress inhibitor which contains a pyrazolone derivative shown by following formula (I), or its salt permitted pharmacologically as an active principle.



(Among a formula, R¹ expresses a hydrogen atom, an aryl group, an alkyl group of the carbon numbers 1-5, or an alkoxy carbonyl-alkyl group of the total carbon numbers 3-6, and; R²) Express a hydrogen atom, an aryloxy group, an aryl sulphydryl group, an alkyl group of the carbon numbers 1-5, or a hydroxyalkyl group of the carbon numbers 1-3, and;. Or R¹ and R², Express an alkylene group of the carbon numbers 3-5 jointly, and; R³, A hydrogen atom, an alkyl group of the carbon numbers 1-5, a cycloalkyl group of the carbon numbers 5-7, A hydroxyalkyl group of the carbon numbers 1-3, benzyl, a naphthyl group, or unsubstituted, Or an alkyl group of the carbon numbers 1-5, an alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxy carbonyl group of the total carbon numbers 2-5, an alkyl sulphydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, A phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different is expressed.

[Claim 2]

In formula (I), R¹ is an alkyl group of the carbon numbers 1-5, R² is a hydrogen atom and R³ An alkyl group

of the carbon numbers 1-5, An alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxy carbonyl group of the total carbon numbers 2-5, an alkyl sulphydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, The oxidation stress inhibitor according to claim 1 which is the phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different.

[Claim 3]

The oxidation stress inhibitor according to claim 1 or 2 which contains 3-methyl-1-phenyl-2-pyrazoline 5-one or its salt permitted pharmacologically as an active principle.

[Claim 4]

The oxidation stress inhibitor according to any one of claims 1 to 3 used as medicine for a therapy of a disease which induces, advances or gets worse by oxidant stress, and/or prevention.

[Claim 5]

The oxidation stress inhibitor according to claim 4 which is a disease accompanied by a rise of mono-unsaturated fatty acid, ubiquinone 10, or cholesterol ester hydroperoxide in a disease which induces, advances or gets worse by oxidant stress.

[Claim 6]

The oxidation stress inhibitor according to any one of claims 1 to 5 which controls oxidant stress by controlling mono-unsaturated fatty acid in plasma, ubiquinone 10, or cholesterol ester hydroperoxide.

[Claim 7]

A measuring method of oxidant stress using mono-unsaturated fatty acid, ubiquinone 10, or cholesterol ester hydroperoxide in plasma as a marker.

[Claim 8]

A measuring method of the oxidant stress according to claim 7 whose mono-unsaturated fatty acid is oleic acid (18:1) and/or palmitoleic acid (16:1).

[Claim 9]

A measuring method of the oxidant stress according to claim 7 or 8 which performs measurement of mono-unsaturated fatty acid, ubiquinone 10, or cholesterol ester hydroperoxide with a liquid chromatography method.

[Claim 10]

A clinical examination method analyzing or evaluating symptoms of a disease which measures content of mono-unsaturated fatty acid in a test subject's plasma, ubiquinone 10, or cholesterol ester hydroperoxide, and induces, advances or gets worse by oxidant stress from the measured value.

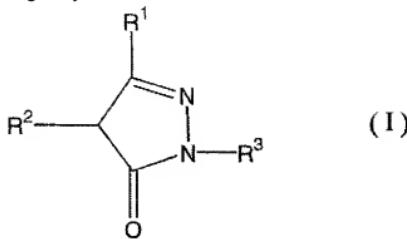
[Claim 11]

How to evaluate the validity of oxidant stress depressant action in which the included drugs concerned have measuring content of mono-unsaturated fatty acid in plasma of a test subject who prescribed for the patient drugs expected to have oxidant stress depressant action, ubiquinone 10, or cholesterol ester hydroperoxide.

[Claim 12]

A way according to claim 11 drugs are a pyrazolone derivative shown by following formula (I), or its salt

permitted pharmacologically.



(Among a formula, R¹ expresses a hydrogen atom, an aryl group, an alkyl group of the carbon numbers 1-5, or an alkoxy carbonyl-alkyl group of the total carbon numbers 3-6, and; R²) Express a hydrogen atom, an aryloxy group, an aryl sulfhydryl group, an alkyl group of the carbon numbers 1-5, or a hydroxyalkyl group of the carbon numbers 1-3, and; Or R¹ and R², Express an alkylene group of the carbon numbers 3-5 jointly, and; R³, A hydrogen atom, an alkyl group of the carbon numbers 1-5, a cycloalkyl group of the carbon numbers 5-7, A hydroxyalkyl group of the carbon numbers 1-3, benzyl, a naphthyl group, or unsubstituted, Or an alkyl group of the carbon numbers 1-5, an alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxy carbonyl group of the total carbon numbers 2-5, an alkyl sulfhydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, A phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different is expressed.

[Claim 13]

In formula (I), R¹ is an alkyl group of the carbon numbers 1-5, R² is a hydrogen atom and R³ An alkyl group of the carbon numbers 1-5, An alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxy carbonyl group of the total carbon numbers 2-5, an alkyl sulfhydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, A method according to claim 12 of being the phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different.

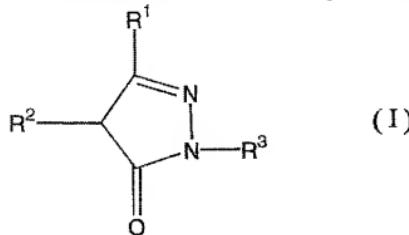
[Claim 14]

A way according to claim 12 or 13 a pyrazolone derivative shown by formula (I) or its salt permitted pharmacologically is 3-methyl-1-phenyl-2-pyrazoline 5-one or its salt permitted pharmacologically.

[Claim 15]

Mono-unsaturated fatty acid in plasma of a patient expected to have trouble with his disease which induced, advanced or gets worse by oxidant stress, Content of ubiquinone 10 or cholesterol ester hydroperoxide is measured, Symptoms of a disease which induces, advances or gets worse by oxidant stress from the

measured value are analyzed or evaluated, As a result, medicine prescribing for the patient a pyrazolone derivative shown by following formula (I), or its salt permitted pharmacologically to a patient judged to have trouble with one's disease which induced, advanced or gets worse by oxidant stress.



(Among a formula, R¹ expresses a hydrogen atom, an aryl group, an alkyl group of the carbon numbers 1-5, or an alkoxy carbonyl-alkyl group of the total carbon numbers 3-6, and; R²) Express a hydrogen atom, an aryloxy group, an aryl sulphydryl group, an alkyl group of the carbon numbers 1-5, or a hydroxyalkyl group of the carbon numbers 1-3, and;. Or R¹ and R², Express an alkylene group of the carbon numbers 3-5 jointly, and; R³, A hydrogen atom, an alkyl group of the carbon numbers 1-5, a cycloalkyl group of the carbon numbers 5-7, A hydroxyalkyl group of the carbon numbers 1-3, benzyl, a naphthyl group, or unsubstituted, Or an alkyl group of the carbon numbers 1-5, an alkoxy group of the carbon numbers 1-5, a hydroxyalkyl group of the carbon numbers 1-3, An alkoxy carbonyl group of the total carbon numbers 2-5, an alkyl sulphydryl group of the carbon numbers 1-3, An alkylamino group of the carbon numbers 1-4, a dialkylamino group of the total carbon numbers 2-8, A phenyl group replaced by 1-3 substituents which are chosen from a group which consists of a halogen atom, a trifluoromethyl group, a carboxyl group, a cyano group, a hydroxyl group, a nitro group, an amino group, and an acetamide group, and which are the same or are different is expressed.

[Claim 16]

The medicine according to claim 15 in which a pyrazolone derivative shown by formula (I) or its salt permitted pharmacologically is 3-methyl-1-phenyl-2-pyrazoline 5-one or its salt permitted pharmacologically.

[Translation done.]